

What is claimed is:

- 1 1. A storage device comprising:  
2 a probe having plural tips; and  
3 a storage medium having a surface in which storage cells are to be formed,  
4 the plural tips of the probe to form plural perturbations in the surface in at least one of  
5 the storage cells for representing a data bit.
- 1 2. The storage device of claim 1, wherein the plural perturbations are redundant  
2 perturbations for representing the data bit.
- 1 3. The storage device of claim 1, wherein the probe comprises a cantilever with the tips  
2 attached to and extending outwardly from the cantilever.
- 1 4. The storage device of claim 1, wherein the probe is adapted to scan the perturbations  
2 of the at least one storage cell with at least one of the tips to detect a state of the data bit as  
3 being either a logical "0" or logical "1."
- 1 5. The storage device of claim 4, wherein presence of at least one perturbation in a  
2 storage cell represents a first state of the data bit, and absence of perturbations in a storage  
3 cell represents a second state of the data bit, the storage device further comprising a detector  
4 to indicate that the at least one storage cell contains a data bit at the first state in response to  
5 the probe detecting at least one of the redundant perturbations.
- 1 6. The storage device of claim 1, further comprising a second probe, the second probe  
2 having plural tips to form plural perturbations in the surface in another storage cell to  
3 represent a second data bit.
- 1 7. The storage device of claim 1, wherein the probe is part of an array of probes, each  
2 probe in the array of probes having plural tips.

1 8. The storage device of claim 1, further comprising:  
2 a substrate in which the probe is formed; and  
3 an actuator to move at least one of the substrate and the storage medium to adjust  
4 relative positions of the substrate and the storage medium.

1 9. The storage device of claim 8, wherein the probe is adapted to form plural groups of  
2 redundant perturbations on the surface of the storage medium to write plural data bits in  
3 respective storage cells, and the actuator is adapted to scan the probe over the plural groups  
4 of perturbations to read the data bits.

1 10. The storage device of claim 1, wherein the tips of the probe are in contact with the  
2 surface of the storage medium to form the perturbations.

1 11. The storage device of claim 10, wherein the tips of the probe are heated to form dents  
2 in the surface, the perturbations comprising the dents.

1 12. The storage device of claim 9, wherein fewer than all of the tips of the probe are in  
2 contact with the surface of the storage medium to perform a read.

1 13. The storage device of claim 11, wherein the probe comprises a cantilever to which the  
2 tips are attached, the cantilever being actuated to a slanted position to engage the fewer than  
3 all of the plural tips of the probe to contact the surface of the storage medium.

1 14. A system comprising:  
2 a processor; and  
3 a storage device coupled to the processor and comprising:  
4 a probe having plural tips; and  
5 a storage medium having a surface in which storage cells are to be formed,  
6 each storage cell to store one data bit;  
7 the plural tips of the probe to form at least two perturbations in the surface in  
8 at least one of the storage cells for representing a data bit.

1 15. The system of claim 14, wherein the probe comprises a cantilever with the tips.

1 16. The system of claim 14, wherein the probe is adapted to read the redundant  
2 perturbations of the at least one storage cell with at least one of the tips to detect a state of the  
3 data bit.

1 17. The system of claim 14, wherein the probe is part of an array of probes, each probe in  
2 the array of probes having plural tips, the storage medium and the array of probes being  
3 moveable with respect to each other to read the storage cells.

1 18. The system of claim 14, wherein the probe is adapted to form plural groups of  
2 redundant perturbations on the surface of the storage medium to write plural data bits in  
3 respective storage cells, and the actuator is adapted to move the storage medium and the  
4 probe with respect to each other to enable the probe to read data bits.

1 19. A method of storing data in a storage device, comprising:  
2 providing a probe having plural tips;  
3 providing a storage medium having a surface to provide storage cells each to store a  
4 data bit; and  
5 forming at least two perturbations in the surface in at least one of the storage cells for  
6 representing a data bit.

1 20. The method of claim 19, further comprising providing additional probes each having  
2 plural tips to form redundant perturbations in respective storage cells.

1 21. The method of claim 19, further comprising providing an actuator to actuate a  
2 cantilever of the probe between a first position in which the plural tips are contacted to the  
3 surface, and a second position in which less than all of the plural tips is contacted to the  
4 surface.